

WHAT IS CLAIMED IS:

1. A measuring device comprising:

light source means for emitting a linearly polarized light;

polarization orientation setting means for switching the polarization orientation of the light flux from said light source means between at least two orientations and making the light flux exit;

light re-combining means for re-combining the light fluxes from said polarization orientation setting means after passing said light fluxes through an object to be measured and a reference plane;

analyzing means for switching the polarization orientation so as to allow only the same polarized component as the polarized light incident on the object to be measured to pass, out of the interference lights obtained through said light synthesizing means;

image pickup means for detecting interference information of the light flux which has passed through said analyzing means; and

calculating means for calculating at least one of the average wavefront and the retardation of the object to be measured, on the basis of the wavefront information obtained when using the light fluxes in the two polarization states

switched by said polarization orientation setting means.

2. A measuring device in accordance with claim 1, wherein said light synthesizing means comprises a twyman-Green type interferometer.

3. A measuring device in accordance with claim 1, wherein said light synthesizing means comprises a Fizeau type interferometer.

4. A measuring device comprising:

a polarization orientation setting member, which is disposed in the optical path for the fluxes incident on an object to be measured, and which have a function of switching the polarization orientation of the light flux incident on said object to be measured between at least two orientations, and making the light flux exit;

an image pickup member;

an analyzer, which is disposed on the light incident side of said image pickup member, and which has a function of switching the polarization orientation so as to allow only the same polarized component as the polarized light incident on the object to be measured pass, out of the interference light fluxes including the light flux which is made to exit from said object to be measured; and

a calculating section connected to said image pickup member, said calculating section calculating at least one of the average wavefront and the retardation of the object to be measured, on the basis of the measured wavefront obtained from the output of said image pickup member, when using the light fluxes in the two polarization orientations switched by said polarization orientation setting member.

5. A measuring device in accordance with claim 4, wherein said interference light fluxes are formed by a twyman-Green type interferometer.

6. A measuring device in accordance with claim 4, wherein said interference light fluxes are formed by a Fizeau type interferometer.

7. A measuring method comprising:
arranging an object to be measured;
making light fluxes in mutually different polarization orientations incident on said object to be measured;
measuring a wavefront for every polarization orientation of the light fluxes from said object to be measured; and
calculating the average wavefront and/or the retardation using the results of said wavefront measuring.

8. A measuring method in accordance with claim 7,
wherein
said light fluxes in the mutually different polarization
orientations are light fluxes in two different polarization
orientations.